

**THE UNIVERSITY OF KANSAS
2010 SUSTAINABILITY REPORT
TO THE KANSAS BOARD OF REGENTS**

The University of Kansas remains committed to sustainability initiatives that protect our natural ecosystems, create economic prosperity, and treat all people with equality and respect. The following outlines efforts KU has made in the past year that address each of the six-implementation principles in the Kansas Board of Regents Sustainability Policy.

LEARNING OPPORTUNITIES:

A number of courses are beginning to integrate issues of campus sustainability into the classroom to contribute to initiatives on the Lawrence Campus. For example, the fall 2009 Strategic Campaigns course focused on the challenge of “creating a culture of sustainability at KU”. The students in this capstone course in the School of Journalism and Mass Communications completed research through focus groups, interviews, and visits to leading institutions, and developed a set of plans to improve sustainability education and outreach at the University of Kansas. As a result, the Center for Sustainability has hired a student communications intern to integrate the recommendations into a single strategic communications plan.

Students in the spring 2010 Environmental Studies Program capstone course also examined issues of campus sustainability. Working in teams, the class researched a range of topics including transportation, food systems, green building as related to the Lawrence Campus. One group even conducted a waste audit and displayed the sorted waste on campus grounds in an effort to raise awareness about recycling and waste reduction.

Although the University does not have a sustainability degree program, over 230 courses are listed as sustainability-related, defined by the Association for the Advancement of Higher Education as courses that “help build knowledge about a component of sustainability or briefly introduce students to sustainability concepts”. The list includes courses from seven schools as well as study abroad experiences. The Center for Sustainability will be working to update this list over the 2010-2011 academic year.

CAMPUS LIFE:

A number of projects that focus on incorporating sustainability principles into the organization of campus life have taken place on both the departmental level and campus wide. In spring 2010, the Department of Student Housing (DHS) conducted a Sustainability Challenge, in which students were asked to sign a pledge to reduce their usage of water, electricity, and gas over a two-month period. Roughly 120 students from four residential communities participated and DSH kept track of usage, comparing it with data from the previous year. Through this effort, DSH saved 97,810 gallons of water, 8,940 kilowatts of electricity, and 394 MBtu of natural gas. Savings were used to implement additional energy and water saving measures in participating communities, including upgrading lighting fixtures, installing more efficient light bulbs, installing user-controlled devices on showerheads to decrease water-flow, and installing motion sensors on light switches.

Efforts to incorporate sustainability into New Student Orientation were increased for 2010 summer orientation events. The Sustainability section of the orientation guide was updated to highlight opportunities for student involvement in sustainability initiatives and education, and a more comprehensive guide remained on the CFS website. A table at the orientation information fair featured tips for students preparing to come to campus, including suggestions to pack in reusable totes, and to bring reusable water bottles and used or rented furnishings, and purchase Energy Star certified electronics.

Additionally, a student sustainability pledge was highlighted at “Hawk Week” events during the start of school year. The pledge encourages students to commit to specific actions of their choosing to reduce energy use, water use, and waste while at KU. As part of the commitment, the Center for Sustainability is developing a listserv to

send additional tips and reminders to student who commit to the pledge and is in the process of developing new components of the sustainability website to further engage students and the rest of the campus community in personal behaviors that will help minimize environmental impacts and raise awareness about issues of sustainability.

Faculty, staff and students also foster a culture of sustainability through the Sustainability Ambassador Program. This network represents approximately 70 campus departments and student organizations working to integrate aspects of sustainability into their activities. This past year the Sustainability Ambassador Program participated in a planning process that drafted a vision statement and established priority areas for addressing issues of sustainability. The vision statement will be integrated into a campus-wide sustainability planning process starting this fall (see *Administration*). One of the working groups in the Ambassador Program also developed a Green Office Recognition Program, encouraging departments to adopt more sustainable practices and highlighting those offices that are working to create a more sustainable work environment.

OPERATIONS:

In 2010, the University of Kansas entered into a performance contract with Energy Solutions Professionals for over \$25 million to address aging heating, ventilation and air conditioning equipment and reduce energy and water use on campus. The projects in the contract that will address fifty-six campus buildings, include:

- Replacing several air-handling units at Haworth and Malott Halls.
- Installing variable air volume controls on lab exhaust systems at Haworth, Malott and Simons Biosciences.
- Expanding building automation control systems in 32 buildings.
- Retrofitting lighting fixtures in 43 buildings.
- Performing plumbing fixture retrofits and replacements in 53 buildings.
- Performing various energy conservation measures to the campus central steam system.
- Installing swimming pool covers in Robinson.
- Implementing an energy awareness training program campus wide.

Construction on these projects is currently underway and is expected to be completed summer of 2011. Energy Solutions Professionals will be tracking and guaranteeing energy savings for a term of 15 ½ years after construction is complete.

In addition to these efforts, windows were replaced on Art & Design and Marvin Hall this year to improve energy efficiency, and window replacements are planned for Dyche Hall and Fowler Shops. There are also plans for HVAC renovation at Dyche, Bailey, Lippincott and Murphy Halls, chiller replacements at Watson Library, and a chilled water plant installation to serve Spencer Museum, Dyche, Lippincott, Bailer and Spencer Library.

Facilities Operations (FO) provides recycling services for most academic and administrative buildings, and on-campus residential facilities. Improvements have been made at the central processing facility to increase efficiency and reduce impacts associated with transportation of recyclables to market. This includes the purchase of a second baler for plastics as well as a densifier to compact aluminum cans, and improvements to the sorting system that allow the program to generate a higher-value commodity by reducing contamination. In FY 2010, nearly 650 tons of material, including scrap metal and secure shredded paper, was recycled on campus. FO Recycling also added a printer cartridge recycling program which is recovering approximately 100 cartridges per week.

The FO Surplus Property Recycling Program continues to collect and distribute surplus property including furniture and office equipment. In FY 2010, the program diverted nearly 3,000 items from the landfill, weighing an estimated 177,199 pounds total, resulting in over \$9,000 in avoided waste collection fees alone. A total of 784 items were redistributed during that timeframe, saving individual departments an estimated 90% on furniture

purchases and generating over \$22,000 in revenue for FO Recycling. The surplus program recently provided all of the furnishings for the new transit facility, saving an estimated \$100,000.

Due to the continued success of recycling efforts, the University has been able to reduce the number of scheduled trash pickups at some locations on campus. Targeted adjustments in FY 2010 resulted in a 10% reduction of pickups when compared to the previous 2 years. Although the cost of regular trash collection increased approximately 6.5% during the fiscal year, the reductions to collections resulted in an overall increase of only 1.3%, a savings of approximately \$8,600.

Students involved with the Potter Lake Project have continued to collaborate with staff from the Kansas Biological Survey, Design & Construction Management, and other campus departments and volunteers to make improvements to the lake. Funding for hydrologic dredging was obtained, with contributions from Student Senate, the Office of the Chancellor, and private donors. This process has removed sediment that contributed to the growth of surface vegetation and low oxygen levels in the lake. A recently completed project to replace storm drains flowing into the lake included a sedimentation basin to reduce the amount of sediment that enters the lake, preventing further degradation. The Potter Lake Project will help coordinate planting in the spring to add native vegetation to the basin, which will help remove excess nutrients from the inflow.

CAMPUS PLANNING:

In 2007, the University of Kansas set an efficiency target of 30% above the minimum guidelines established by the *ASHRAE Standard 90.1 - 2004 Energy Efficient Design of New Buildings Except Low Rise Residential Buildings* for energy efficiency in new construction. The new standard was used for the new School of Pharmacy building, which was dedicated this fall, and the Transit Maintenance Facility, which will be completed in December. It was also used in designing the Lied Center addition on the Lawrence Campus and the Business, Engineering, Science, and Technology (BEST) Building at the KU Edwards Campus. Both of those projects are currently underway with completion expected in 2011.

In addition to these efforts, construction will soon begin on the Measurement, Materials and Sustainable Environment Center (M2SEC) for the School of Engineering. The facility is expected to be complete by the beginning of 2012 and will incorporate the latest in green technology, including elements that will qualify it for LEED certification. Planning has also begun for the renovation of Gertrude Sellards Pearson residence hall, and the design team is exploring a number of options for energy conservation, including geothermal.

The University is also working to integrate green infrastructure for stormwater management into landscape designs. The West Campus Urban Stormwater Management Project, located near the new School of Pharmacy, is designed to capture storm water runoff through bio-retention swales, natural channels and native vegetation. The channels, planted with native plants, will slow the water and remove pollutants from the runoff, capture water on site, and allow it to percolate into the soil. Additionally this functional open space will connect the research buildings and satellite parking via accessible sidewalks and promote the opportunity for interaction among building occupants. The native and naturalized vegetation will require less maintenance, less water and fewer chemicals to thrive and will increase the natural diversity of the site. By integrating sustainable practices, this project will generate long-term environmental and social benefits. Funding for the project was provided by the Kansas Department of Health and Environment as part of the Kansas Water Pollution Control Revolving Fund Innovative Green Infrastructure Projects funded by American Recovery and Reinvestment Act of 2009, with matching funds from the University. Bioswales have also been included for stormwater management at the new Transit Maintenance Facility.

During the summer of 2010, a revolving green loan fund was established to support additional energy efficiency projects. The office of the Provost, Student Success, and Student Senate provided the initial funding for the fund, and a lighting retrofit project has been identified at the Ambler Student Recreation Fitness Center to pilot the program. Savings from the project will be returned to the account to invest in additional conservation and efficiency efforts.

ADMINISTRATION:

In spring 2010, the Center for Sustainability released *CAP KU: Creating a Climate Action Plan for The University of Kansas*, a comprehensive inventory of the factors that contribute to KU's greenhouse gas emissions and recommendations for reducing our impacts. The report is the result of a 2009 collaboration with a graduate course consisting of IGERT C-CHANGE Fellows and Urban Planning students. Working from the class's greenhouse gas inventory and final report, CFS refined the greenhouse gas calculations and added to the original report. The emissions inventory and report are based on data available through Fiscal Year 2008. CFS will be establishing a centralized process for capturing greenhouse gas data for future years. Additional details and a complete copy of the report are available at <http://www.sustainability.ku.edu/CAP-KU/>.

Throughout the spring 2010 semester, Chancellor Bernadette Gray-Little met with a team of student leaders to discuss expanding sustainability initiatives at the University of Kansas. She also had discussions with faculty and staff from the Urban Planning Graduate Program, Design and Construction Management and the Center for Sustainability. Chancellor Gray-Little announced in a 2010 [Earth Day Proclamation](#) that the University will begin developing a comprehensive sustainability plan to “develop strategies for minimizing our environmental and social impacts, and establish a system for measuring our progress.”

The Center for Sustainability has been tasked with coordination of the plan. The Office of the Chancellor has provided funding to hire a sustainability planning intern to assist with the effort and to support associated activities. A seventeen-member Sustainability Advisory Council appointed by the Provost, which includes representation from campus operational, educational, and research divisions and other key stakeholders, will provide administrative guidance for the planning process, while a set of working groups will gather background research and recommend goals, strategies, measurements for ten topic areas ranging from community engagement to waste reduction. *CAP-KU* and other reporting efforts by CFS will serve as resources for this centralized sustainability planning effort. A draft is expected to be available by late-April 2011, with a final document completed by the end of June 2011. CFS has created a section of their website at <http://www.sustainability.ku.edu/Plan/> to provide an overview of the effort and progress updates.

To help provide a framework for the sustainability plan, the University has registered as a charter participant in the Sustainability, Tracking, Assessment & Rating System (STARS) program administered by the Association for the Advancement of Sustainability in Higher Education (AASHE). STARS involves public reporting of information related to the University's sustainability performance. Participants report achievements in three overall areas: 1) education & research, 2) operations, and 3) planning, administration & engagement.

OUTREACH:

As noted above, the Center for Sustainability is developing a communication strategy based on recommendations from KU students to improve education and outreach efforts related to sustainability at the University. One aspect of this includes updating the website at <http://www.sustainability.ku.edu> to include more information about initiatives that are sponsored by the Center and other departments throughout campus. Additionally, a link to the sustainability website has been added to the main KU home page, providing an additional connection to the general public.

To expand awareness about efforts at KU specific to issues of energy, the Center for Sustainability, KU Facilities Operations, KU Energy Council, and Environmental Solutions Professionals have partnered to maintain a website at <http://www.energy.ku.edu>. This site was updated this year to highlight energy-related efforts in education, research, operations, and campus life. In addition to providing information about specific programs at KU, the site includes tips and links to resources about energy conservation for homeowners. A display was created for the 2010 Lawrence Energy Conservation Fair based on the content of this site, and will be used at future energy-related events. The Center for Sustainability and KU Energy Council have also been working with

the City of Lawrence/ Douglas County sustainability coordinator to address areas of overlapping interest in the community and promote community-wide events and initiatives addressing issues of sustainability.

Some of the most active outreach efforts at the University of Kansas occur through research centers such as the Center for Environmentally Beneficial Catalysis (CEBC), Center for Remote Sensing of Ice Sheets (CReSIS), and the KU Energy Council. For example, CEBC's Research Experience for Teachers program known as "Shaping Inquiry from Feedstock-to-Tailpipe," or SHIFT engages high school and community college teachers in research on different aspects of renewable fuels and helps them transform their research projects into innovative lessons to take back to their classrooms. CEBC also coordinates Students for Green Chemistry and Engineering student organizations and uses low-tech [YouTube videos](#) to share information about their complex research. Similarly, CReSIS maintains educational programs on polar science, remote sensing, and climate change for K-12 educators and have participated in outreach efforts on a national scale, including a recent appearance at the USA Science and Engineering Expo at the National Mall in Washington, D.C.